

REMARKS

The Office Action dated January 30, 2004 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto. The specification has been amended to correct a transcription error and the claims have been amended to more particularly point out and distinctly claim the subject matter of the invention. No new matter has been added. Claims 1-13 are currently pending in the application and are submitted for consideration.

The specification was objected to because the reference index "3114" on page 6, line 7 does not exist. The specification has been amended so that the reference index is "314" as opposed to the non-existent "3114." Thus, the objection is rendered moot.

Claims 1-13 were objected to because they contained the phrase "characterized by." The claims have been amended to include "wherein" in place of the objected to phrase of "characterized by." Thus, the objection is rendered moot.

Claims 1-3 and 5-13 were rejected under 35 U.S.C. 103(a) as being unpatentable over Suonvieri (U.S. Patent No. 5,715,245) in view of Hoffpauir (S.I.R. Number H1,918). The Office Action took the position that Suonvieri disclosed all of the elements of claims 1-3 and 5-13, except for a network management system that is operatively interconnected by means of telecommunication connections comprising traffic channels and control channels. The Office Action then relied on Hoffpauir to cure this deficiency in Suonvieri. The above rejection is respectfully traversed for the reasons which follow.

Claim 1 recites a method of connecting network elements to a radio system comprising one or more network elements, a base station controller and a network management system that are operatively interconnected by means of telecommunication connections including traffic channels and control channels. System information between the network elements is transmitted in frames that are divided into time slots, and in which system the base station controller controls one or more network elements, and network element identification information has been fed into a network element to be installed, and in which method the network element is physically connected to the system by means of the telecommunication connections. In frames used by the base station controller for communication with the network elements, unused consecutive time slots of the frames being divided into one or more groups, and each group having one time slot used as a communication channel as regards time slot allocation from said group. The base station controller allocates necessary telecommunication capacity for the use of communication between the network element and the base station controller. The allocated telecommunication capacity is branched by software through the telecommunication connections to the network element.

claim 2 recites a method of connecting network elements to a radio system comprising one or more network elements, a base station controller and a network management system that are operatively interconnected by means of telecommunication connections including traffic channels and control channels. Furthermore, system information between the network elements is transmitted in frames that are divided into

time slots, and in which system the base station controller controls one or more network elements, and network element identification information has been fed into a network element to be installed, and in which method the network element is physically connected to the system by means of the telecommunication connections. In frames used by the base station controller for communication with the network elements, unused consecutive time slots of the frames are divided into one or more groups, and each group having one time slot used as a communication channel as regards time slot allocation from said group. The claim also recites predetermining identification information for the base station controller about network elements allowed to be connected thereto. After being physically installed, the network element to be installed searches the frames received by means of the telecommunication connections for the communication control channels of the groups and identifies free groups by means of the communication channels found. The network element transmitting over the communication channel of the group its identification information and hardware information to the base station controller comparing the identification information with the identification information about the allowed network elements. When the identification information is allowed, accepting the network element, and the base station controller allocates from the group necessary time slots for the use of communication between the network element and the base station controller and informs the network element of the allocated time slots over the communication control channel, and the allocated time slots are branched by software through the telecommunication connections to the network element.

Claim 11 recites a radio system comprising one or more network elements, a base station controller and a network management system that are operatively interconnected by means of telecommunication connections comprising traffic channels and control channels. The system information between the network elements is transmitted in frames that are divided into time slots, and the base station controller controls one or more network elements that comprise network element identification information. In frames arranged to be used by the base station controller for communication with the network elements, unused consecutive time slots of the frames are divided into one or more groups, and each group having one time slot used as a communication channel as regards time slot allocation from said group. Claim 11 further recites predetermining identification information for the base station controller about network elements allowed to be connected to the base station controller. After being physically installed, the network element to be installed is arranged to search the frames received by means of the telecommunication connections for the communication channels of the groups and to identify free groups by means of the communication channels found. The network element is arranged to transmit over the communication channel of the group its identification information and hardware information to the base station controller which is arranged to compare the identification information with the identification information about the allowed network elements, and when the identification information is allowed, to accept the network element. The base station controller is arranged to allocate from the group necessary time slots for the use of communication between the network

element and the base station controller and to inform the network element of the allocated time slots.

The claimed invention offers several advantages over the prior art. First, network element installation into the system is automated. As a result, the amount of necessary manual work decreases. Furthermore, time slot design of telecommunication connections between base station controllers and network elements becomes redundant because connections are automatically established and controlled by the base station controller. Automation allows potential errors, and costs to be reduced. In addition, the invention enables faster installations because installation personnel no longer must be present in network control or in connection with base station controllers.

The combination of Suonvieri and Hoffpauir fails to disclose or suggest the elements of the claims, and therefore fails to provide the advantages discussed above.

Suonvieri discloses data transmission from a controller to successive base stations linked in series. More specifically, Suonvieri teaches a method to automate and facilitate the setting up or configuration of the structure of the data transmission network between the base station and the base station controller or switching center. Configuration data indicating in which timeslots of the frame the useful data intended for the network element is carried is transmitted to the network element in a predetermined timeslot of the frame. The base stations look for configuration data intended for them in the same predetermined time slot, and in the base station network, a preceding base station places

the configuration data intended for the following base station in that same predetermined time slot.

Hoffpauir discloses an integrated authentication center and method for authentication in a wireless telecommunications network. The integrated authentication center includes an application process, a home location register, and an authentication center. The method disclosed in Hoffpauir includes the steps of receiving a request from a subscriber for service and requesting approval from a home location register to provide service to the subscriber.

With respect to the rejection of independent claims 1, 2, and 11, these claims recite, in part, that unused consecutive time slots of the frames are divided into one or more groups, called transmission groups. The claims further recite that the base station controller automatically creates one time slot for each group, and the time slot is used as a communication control channel with respect to time slot allocation from the group. Suonvieri, on the other hand, merely discloses that configuration data indicating which time slots of the frame the useful data intended for the network element is carried is transmitted to the network element in a predetermined timeslot of the frame (Suonvieri, Column 2, lines 42-45). Thus, Suonvieri does not disclose or suggest dividing unused consecutive time slots into transmission groups. Nor does Suonvieri disclose or suggest that a base station controller automatically creates a time slot for each group.

Furthermore, Hoffpauir does not cure the deficiencies inherent in Suonvieri. Hoffpauir, as discussed earlier, discloses a wireless telecommunication system with an

authentication method. Hoffpauir does not teach or suggest capacity allocation of a telecommunication system and therefore also fails to disclose the elements of the claims discussed above.

Therefore, Suonvieri and Hoffpauir, whether considered alone or in combination, fail to disclose or suggest the elements of claims 1, 2, and 11. As such, applicants respectfully submit that the rejection of claims 1, 2, and 11 as being rendered obvious by the combination of Suonvieri and Hoffpauir is improper for failing to teach or suggest all the elements of those claims.

With respect to the rejection of claims 3, 12, and 14, these claims recite, in part, that the base station controller rejects the network element if its identification information does not exist among the identification information on the allowed network elements. The combination of Suonvieri and Hoffpauir contains no such limitation. The system disclosed in Suonvieri does not disclose or suggest that the base station will perform such a test, instead the base stations in Suonvieri recognize configuration data intended for them and join the system. Hoffpauir also fails to cure this deficiency. The solution recited in the pending claims is more suitable for larger systems than the one taught in Suonvieri.

With respect to the rejection of claim 6, that claim recites, in part, that unused-time-slot groups are transmitted by software as whole groups in the frames to network elements that are connected to base station controllers by telecommunication connections capable of the transmission. As stated earlier, the combination of Suonvieri and

Hoffpauir fail to teach or suggest that unused consecutive time slots of the frames are divided into one or more groups. Consequently, the combination of Suonvieri and Hoffpauir also fails to disclose or suggest the transmission of the unused-time-slot groups via software.

Additionally, applicants submit that claims 3-10, 12, and 13 depend from claims 1, 2, and 11. Therefore, claims 3-10, 12, and 13 should be allowed for at least their dependence upon independent claims 1, 2, and 11, and the specific limitations recited therein.

Claim 4 was rejected under 35 U.S.C. 103(a) as being unpatentable over Suonvieri in view of Hoffpauir and in further view of Poon (U.S. Patent No. 5,940,380). The Office Action took the position that the combination of Suonvieri and Hoffpauir discloses all of the elements of the claim, with the exception of a method wherein the network element selecting another base station controller group communication channel when the base station controller rejects the network element, the network element transmitting its identification information and hardware information over the communication channel to another base station controller, and the network element repeating this procedure until a base station controller accepts the network element. The Office Action relies on Poon to cure these deficiencies in the combination of Suonvieri and Hoffpauir. Applicants respectfully submit, however, that the combination of Suonvieri, Hoffpauir, and Poon fails to disclose or suggest the elements of the claims, and therefore fails to provide the advantages discussed above.

Poon discloses a method and arrangement relating to radio communication networks. Specifically, Poon teaches a method in which the communication unit ignores communication with the first base station in certain time slots assigned to the dedicated communication channel, and instead uses those time slots to receive signals from the second base station.

Claim 4 recites, in part, that the network element selects another base station controller group communication channel when the base station controller rejects the network element. As mentioned earlier, the combination of Suonvieri, Hoffpauir, and Poon does not disclose or suggest that the base station controller rejects network elements on the basis of the identification information of the element. Thus, the combination of Suonvieri, Hoffpauir, and Poon do not render claim 4 obvious. Moreover, applicants respectfully submit that claim 4 is dependent upon claim 2, and therefore should be allowable for at least that dependence and the specific limitations recited therein.

Applicants respectfully submit that the cited prior art references of Suonvieri, Hoffpauir, and Poon fail to disclose or suggest critical and important elements of the claimed invention. These distinctions are more than sufficient to render the claimed invention unanticipated and unobvious. It is therefore respectfully requested that all of claims 1-13 be allowed, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by

telephone, the applicant's undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'William F. Nixon', written over a horizontal line.

William F. Nixon

Registration No. 44,262

Customer No. 32294
SQUIRE, SANDERS & DEMPSEY LLP
14TH Floor
8000 Towers Crescent Drive
Tysons Corner, Virginia 22182-2700
Telephone: 703-720-7800
Fax: 703-720-7802

WFN:cct